

SUPERGLUE CHEMICAL FIRE

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Category: Fire

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DESCRIPTION

During the routine application of superglue in a lab, the cotton bud to which the superglue was applied started smoking and caught fire.

FINDINGS

- Superglue is the common name for cyanoacrylate adhesives, a class of glues that have high bond strength and quick cure times. Some brands contain polymerization inhibitors that prevent these runaway reactions.
- Cyanoacrylates cure when exposed to moisture. Catalytic amounts of water present on the cotton bud led to an extremely exothermic reaction between the cyanoacrylate and the cellulose in the cotton, which ignited.
- Smoke from these reactions can be irritating to the respiratory tract.
- The heat generated from curing cyanoacrylate can also result in burns if in contact with skin.
- The cotton bud burned itself out rapidly, but was subsequently doused in water to further cure any remaining cyanoacrylate and remove heat from the system. It was disposed in regular waste after soaking.

ROOT CAUSES

A cellulose-based applicator was used to apply the cyanoacrylate to a surface. Due to the high humidity, a catalytic amount of water caused the cyanoacrylate to rapidly cure exothermically with the cellulose and the resulting heat led to a fire.

ACTIONS

- Check the glue SDS for the presence of a polymerization inhibitor.
- When applying cyanoacrylate-based superglues that don't contain inhibitors, always make sure to use a compatible applicator. These applicators can be polyethylene plastic picks or brushes or passivated stainless steel picks.
- Avoid using cellulose-based applicators with high surface areas (wood, cotton, etc.).

ALL SAFETY COMMUNICATIONS CAN BE FOUND AT

[HTTPS://RISKMANAGEMENT.ND.EDU/COMMUNICATION/SAFETY-COMMUNICATION/](https://riskmanagement.nd.edu/communication/safety-communication/).